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GIET UNIVERSITY, GUNUPUR – 765022

M. Tech (First Semester – Regular) Examinations, June – 2021
MPCCT1010 – ADVANCED CONCRETE TECHNOLOGY
 (Construction Technology and Management)

Time: 2 hrs

Maximum: 50 Marks

The figures in the right hand margin indicate marks.

PART – A

(2 x 10 = 20 Marks)

Q1. Answer **ALL** questions

- a. Define heat of hydration in cement.
- b. Mention any four applications of rapid hardening cement.
- c. What are the important products formed during hydration of the cement?
- d. List out the factors affecting the workability of concrete.
- e. Mention the relationship between compressive strength and flexural strength of concrete.
- f. How does sulphate attack affect the durability of concrete?
- g. How will you calculate the aggregate content while designing a mixture proportion?
- h. How will you manufacture aerated concrete?
- i. Differentiate no-fines concrete and lightweight aggregate concrete.
- j. What are the causes of distress in concrete structures?

PART – B

(6 x 5 = 30 Marks)

Answer **ANY FIVE** questions

Marks

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| 2. Assume that you are involved in the construction of a Dam project. How will you choose the cement for concrete? | (6) |
| 3. Discuss the important properties of aggregates in the context of durability of concrete. | (6) |
| 4. Explain the method of evaluating the modulus of elasticity of concrete without destructing the concrete sample with a neat sketch? | (6) |
| 5. Discuss the rheological properties of SCC and its influence on strength and durability. | (6) |
| 6. Design a concrete mix proportion for M30 with the following information
Type of cement OPC; Maximum Nominal size of aggregates- 20mm
Type of exposure- Severe; Workability - 75 mm slump; Chemical admixture - Super plasticizer | (6) |
| 7. List out the different methods of curing to increase the properties of concrete. | (6) |
| 8. List out any five special concrete and its applications in detail. | (6) |

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